Volunteer Lake Assessment Program Individual Lake Reports

AYERS POND, BARRINGTON, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,987	**Max. Depth (m):**	9.1	**Flushing Rate (yr^{1})**	1
Surface Area (Ac.):	228	**Mean Depth (m):**	4.4	**P Retention Coef:**	0.69
Shore Length (m):	7,400	**Volume (m^{3}):**	4,030,500	**Elevation (ft):**	233

TROPHIC CLASSIFICATION

Year	Trophic class
1979	OLIGOTROPHIC
1995	OLIGOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

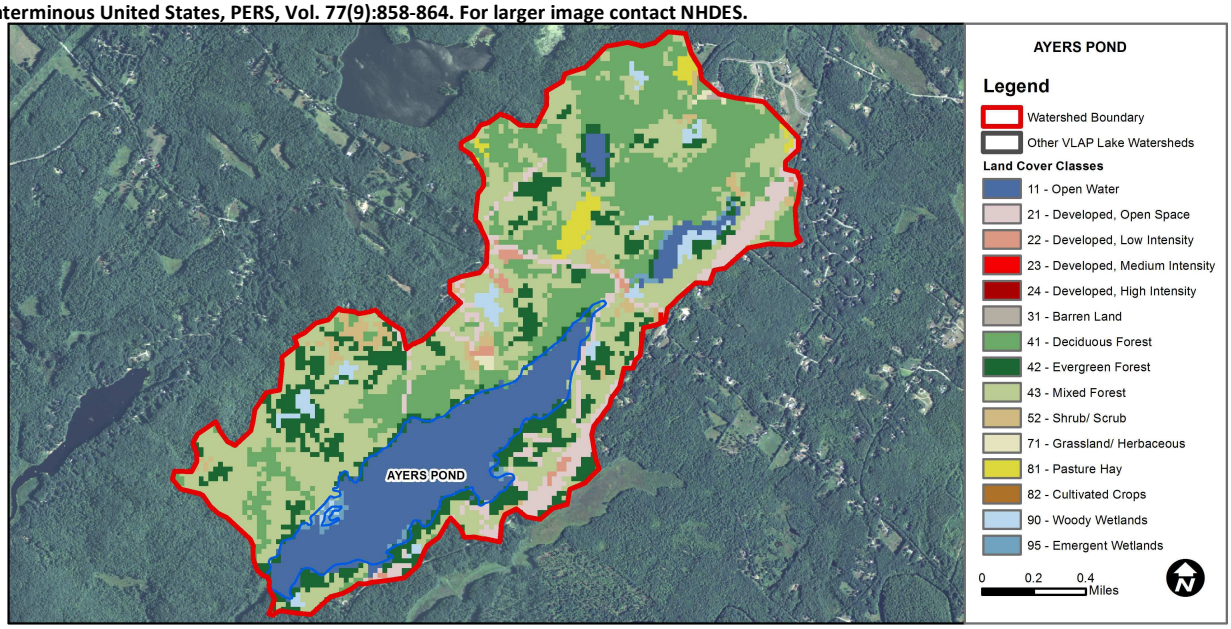
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Encouraging	>2 samples exist that are > 75% of geometric mean criteria, but not enough samples to calculate geomertic mean. No single sample exceedances. More data needed.
	Chlorophyll-a	Good	At least 10 samples with 1 sample but < 10% of samples exceeding criteria.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

AYERS POND - CAMP FIRESIDE BEACH	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	16.6	Barren Land	0.06	Grassland/Herbaceous	0.24
Developed-Open Space	6.28	Deciduous Forest	24.86	Pasture Hay	1.49
Developed-Low Intensity	0.78	Evergreen Forest	12.82	Cultivated Crops	0
Developed-Medium Intensity	0.03	Mixed Forest	31.53	Woody Wetlands	2.19
Developed-High Intensity	0	Shrub-Scrub	2.26	Emergent Wetlands	0.84

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
AYERS POND, BARRINGTON, NH
2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **CHLOROPHYLL-A:** Chlorophyll levels were low throughout the summer and below the state median. Historical trend analysis indicates relatively stable chlorophyll with moderate variability between years.
- **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride levels were slightly elevated and greater than the state medians. Road salting associated with winter road maintenance practices is likely contributing to the slightly elevated levels. Historical trend analysis indicates significantly increasing (worsening) epilimnetic conductivity since monitoring began.
- **TOTAL PHOSPHORUS:** Deep spot phosphorus levels were low throughout the summer and much less than the state median. Historical trend analysis indicates relatively stable epilimnetic phosphorus with moderate variability between years. Inlet phosphorus levels were below average for this station this year.
- **TRANSPARENCY:** Transparency was good throughout the summer and better than the state median. Historical trend analysis indicates stable transparency with low variability between years.
- **TURBIDITY:** Deep spot and tributary turbidities were low on each sampling event.
- **PH:** Deep spot pH was slightly lower than desirable range 6.5 – 8.0 units and decreased as the summer progressed. Historical trend analysis indicates relatively stable epilimnetic pH with moderate variability between years.
- **RECOMMENDED ACTIONS:** Epilimnetic conductivity has significantly increased since monitoring began. Encourage local road agents to obtain a Voluntary NH Salt Applicator license through the UNH Technology Transfer Center's (T2) Green SnowProw Certification Program. Keep up the great work!

Table 1. 2013 Average Water Quality Data for AYERS POND

Station Name	Alk.	Chlor-a	Chloride	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	m		ntu	
						NVS	VS		
Epilimnion	3.17	2.47	16	80.0	7	4.98	5.32	0.43	6.45
Metalimnion				80.9	7			0.48	6.46
Hypolimnion				79.1	8			0.67	6.25
Inlet			25	113.0	15			0.73	6.14
Outlet				79.6	8			0.49	6.35

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Stable	Trend not significant; data moderately variable.	Chlorophyll-a	Stable	Trend not significant; data moderately variable.
Conductivity	Degrading	Data significantly increasing.	Transparency	Stable	Trend not significant; data show low variability.
			Phosphorus (epilimnion)	Stable	Trend not significant; data moderately variable.